

In the claims:

Claim 1 (currently amended). A method for producing a metal chelate comprising the steps of:
providing a sufficient amount of at least one amino component;
providing a sufficient amount of at least one sugar component;
providing a sufficient amount of at least one metal component; and,
mixing said sufficient amounts of said amino component, sugar component, and metal salt component with water for a sufficient time and at a sufficient temperature to form a soluble metal chelate containing solution where the chelate is a Maillard Reaction Product.

Claim 2 (original). The method of claim 1 further comprising the steps of evaporating the soluble metal chelate containing solution; thereafter drying to form a dried metal chelate; and, milling to form a powder of dried metal chelate.

Claim 3 (currently amended). The method of claim 1 where:

said amino component is selected from the group consisting of glycine, lysine, glutamic and other amino acids, dipeptides, polypeptides, protein hydrolyzates, milk solids, cream, egg solids, gelatin, and whey proteins;

said sugar component is selected from the group consisting of ~~glucose~~, sucrose, ~~mono-~~ and disaccharides, dextrose, high fructose corn syrup, starches, maltodextrins; and,

said metal component is selected from the group consisting of salts, hydroxides and oxides of calcium, ~~manganese~~, magnesium, copper, zinc, cobalt, chromium, potassium, and iron.

Claim 4 (currently amended). The method of claim 2 where:

said amino component is selected from the group consisting of glycine, lysine, glutamic and other amino acids, dipeptides, polypeptides, protein hydrolyzates, milk solids, cream, egg solids, gelatin, and whey proteins;

said sugar component is selected from the group consisting of ~~glucose~~, sucrose, ~~mono-~~ and disaccharides, dextrose, high fructose corn syrup, starches, maltodextrins; and,

said metal component is selected from the group consisting of salts, hydroxides and oxides of calcium, ~~manganese~~, magnesium, ~~copper~~, zinc, cobalt, chromium, potassium, and iron.

Claim 5 (original). A method for producing a metal chelate comprising the steps of:
providing a sufficient amount of at least one amino component;
providing a sufficient amount of at least one sugar component;
providing a sufficient amount of at least one metal component;
providing a sufficient amount of at least one oxidizing compound; and,
mixing said sufficient amounts of amino component, sugar component, oxidizing compound and metal component with water for a sufficient time and temperature so that said sugar present is substantially oxidized thereby forming metal chelates in a soluble metal chelate containing solution.

Claim 6 (original). The method of claim 5 further comprising the steps of evaporating the soluble metal chelate containing solution; thereafter drying to form a dried metal chelate; and, milling to form a powder of dried metal chelate.

Claim 7 (currently amended). The method of claim 5 where:

said amino component is selected from the group consisting of glycine, lysine, glutamic and other amino acids, dipeptides, polypeptides, protein hydrolyzates, milk solids, cream, egg solids, gelatin, and whey proteins;

said sugar component is selected from the group consisting of ~~glucose~~, sucrose, ~~mono-~~ and disaccharides, dextrose, high fructose corn syrup, starches, maltodextrins;

said metal component is selected from the group consisting of salts, hydroxides and oxides of calcium, manganese, magnesium, copper, zinc, cobalt, chromium, potassium, and iron; and,

said oxidizing compound is selected from the group consisting of hydrogen peroxide, hypochlorides, periodates, air, and oxygen.

Claim 8 (currently amended). The method of claim 6 where:

said amino component is selected from the group consisting of glycine, lysine, glutamic and other amino acids, dipeptides, polypeptides, protein hydrolyzates, milk solids, cream, egg solids, gelatin, and whey proteins;

said sugar component is selected from the group consisting of ~~glucose~~, sucrose, ~~mono- and~~ disaccharides, dextrose, high fructose corn syrup, starches, maltodextrins;

said metal component is selected from the group consisting of salts, hydroxides and oxides of calcium, manganese, magnesium, copper, zinc, cobalt, chromium, potassium, and iron; and, said oxidizing compound is selected from the group consisting of hydrogen peroxide, hypochlorides, periodites, air, and oxygen.

Claim 9 (currently amended). A method for producing a metal chelate comprising the steps of:

providing an amino component selected from the group consisting of: glycine, lysine, glutamic and other amino acids, dipeptides, polypeptides, protein hydrolyzates, milk solids, cream, egg solids, gelatin, and whey proteins;

providing a sugar component selected from the group consisting of: ~~glucose~~, sucrose, ~~mono- and~~ disaccharides, dextrose, high fructose corn syrup, starches, maltodextrins;

providing a metal component selected from the group consisting of salts, hydroxides and oxides of calcium, manganese, magnesium, copper, zinc, cobalt, chromium, potassium, and iron;

combining said amino component and said sugar component in water to form a solution and mix at atmospheric pressure for a sufficient time and temperature to form a solubilized Maillard Reaction Product solution;

thereafter, adding said metal component to said Maillard Reaction Product solution and mix at atmospheric pressure for a sufficient time and temperature to form a solubilized metal chelate solution; and,

evaporating said solubilized metal chelate solution to yield a metal chelate, drying said metal chelate to form a dried metal chelate; and, milling to form a metal chelate powder.

Claim 10 (original). The method of claim 9 where a sufficient amount of an oxidizing compound is added to said solution containing said amino component and said sugar component to form a solubilized Maillard Reaction Product solution.

Claim 11 (original). The method of claim 10 where said oxidizing compound is selected from the group consisting of hydrogen peroxide, hypochlorides, periodites, air, and oxygen.